

## **Comments\_508953.v2**

### **Major comments:**

1. Title: The title of the revised manuscript is different from that stated in the summary of the response. Please change the title in the revised manuscript to the following:

Analysis of droughts in the central region of South Africa and their association with SST anomalies

2. The authors claimed in their replies that the analysis of the atmospheric circulation anomalies was included in the revised manuscript (also listed as keywords). However, I couldn't find any related results in the paper. The authors need to either substantiate the analysis or remove the "atmospheric circulation anomalies" from the keywords.

3. The authors need to give an explanation for presenting most of the results for C52A

4. The authors claimed that there is an increasing trend of moderate to extreme drought events (page 13, lines 4 and 5). Some significance test is needed to determine whether these trends are statistically significant.

5. Figure 5 is really hard to understand. Why did the authors use such large lag months ( $> 20$ ) for the cross-correlation? What is the sample size for the cross-correlation with a 284-month lag?

### **Minor edits:**

1. Please replace "El-Nino" and "El Nino" with "El Niño" throughout the manuscript.

2. Please remove "for illustrative purpose" throughout the manuscript.

3. While both SPI and SPEI were used in the early version of the manuscript, the revised manuscript was based only on SPEI. The authors need to remove "SPI and" (page 7, line 5) and replace "both SPI and SPEI have" with "SPEI has".

4. Page 3, line 6: Replace "ENSO" with "El Niño – Southern Oscillation (ENSO)"

5. Page 5, lines 2 and 3: Delete "and link" because "link" has the same meaning as "association"

6. Page 7, line 6: Replace "Centre" with "Center"

7. Page 9: For Table 3, the authors may want to add a sentence: “For all time scales, the similar distribution of drought events over different drought categories is due to the transformation of the derived SPEI values to follow a normal distribution.”

8. Page 10, line 2” Change “~~A~~ 3-month SPEI values” to “The 3-month SPEI values”

9. Page 10, line 5: Delete “s” after “value” (a 6-month SPEI value)

10. Page 12, first paragraph: Please make following edits as marked.

“Based on 12-month time scale, two extreme drought events were recorded in the area in ~~February the years~~ 1992 and ~~1999 in the month of February~~ and one extreme drought event in ~~the month of~~ January ~~in~~ 1993. However, no extreme drought event was recorded in ~~the month of~~ December based on 12-month time-scale. Similarly, based on 6-month time scale one extreme drought event was recorded in the area in ~~the month of~~ January ~~in the year~~ 1973 whereas no extreme drought was recorded in the other two summer months. It can be noted that the quaternary catchment has been under persistent drought event during the three summer months in the years 1990-1993 regardless of the event category.”

Additionally, there seems no extreme drought in February 1999.

11. Page 16, Fig. 4: It is not clear whether the time series shown in Fig. 4 is for Nino 3.4 SST as described in the figure caption or for NINO-3 SST as described in page 15, line 2.

12. Page 18, line 7: Insert “and” after “hydrological”.